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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/807,353	04/12/2001	Dharshini Chryshantha Fongalland	JMYT-234US	6310

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EXAMINER

MENON, KRISHNAN S

ART UNIT	PAPER NUMBER
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1723

DATE MAILED: 01/02/2003

5

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/807,353

Applicant(s)

FONGALLAND ET AL

Examiner

Krishnan S Menon

Art Unit

1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 1.312).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 24 September 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application):
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- ☐ Interview Summary (PTO-413) Paper No(s) _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other _____

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DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another which has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

1. Claims 1,2,6-10,12,13, 17 and 18 are rejected under 35 U.S.C. 102 b) as being clearly anticipated by Stonehart et al (US 5,523,181)

Stonehart (181) teaches a substrate or a composite membrane comprising a porous matrix of amorphous silica fibers (col 4 lines 15-34) bound by a binder (col 4 lines 47-54) as in instant claims 1 and 2 and having an ion-conducting polymer (col 4 lines 47-54) as in instant claims 8 and 10 for use in a composite membrane as in instant claim 9 or fuel cell as in instant claim 13 (col 3 lines 43-53). The silica fibers are of 6-micron diameter as in instant claims 6 and 7 (col 4 lines 28-33). Moreover,

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thickness >200 microns as in instant claim 12 (col 5 lines 25-29). The reference also teaches a membrane electrode assembly and a fuel cell as in instant claim 17 and 18 (col 3 lines 43-53; col 7 lines 1-13).

2. Claims 14, 15, 16 and 19 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Denton et al (US 6,042,958).

Denton (958) teaches a process for manufacture of a substrate comprising the steps of: dispersing the mixed silica fibers in water to form a slurry, depositing the slurry on a mesh bed, applying the binder for impregnation and drying and compacting (col 6 lines 14-16). The impregnation may be carried out by using nip roller coating (calendering) as in instant claim 16 (col 6 lines 14-25). The fibers are randomly oriented in the substrate as in instant claim 19 (col 6 lines 8-13).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 3-5 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stonehart (181) in view of Denton (958).

Stonehart (181) teaches all the elements of instant claims 3-5 and 11 as in claims 1 and 10 above, except about the nature of silica fibers as chopped and/or microfibers as in instant claim 3, their proportion in the substrate as in instant claim 4 and 5, and testing the substrate in boiling water as in instant claim 11. Denton (958) teaches silica fibers and chopped and microfibers (e.g., Examples 23, examples 2-5). It would be obvious to one of ordinary skill in the art at the time of invention to have the silica fibers as chopped or microfibers or a mix of the two as taught by Denton (958) in the teachings of Stonehart (181) as alternate but equivalent. As to their proportions, Stonehart (181) in view of Denton (958) does not teach what proportions they should be mixed. However, the range of mixing also would be obvious to one of ordinary skill in the art at the time of invention, as the proportion does not seem to be very important from the teachings of Denton (958) (e.g., examples 2-4 do not provide any specific proportion indicating that the actual mix proportion is not important). As to the boiling water test as in instant claim 11, it would be obvious to one of ordinary skill in the art at the time of invention that the membrane as made by the process of Stonehart (181) should also test similarly and provide about 90% change in area.

Conclusion

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S. Menon whose telephone number is 703-305-5999. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on 703-308-0457. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Krishnan S. Menon
Patent Examiner
December 30, 2002

Walker
W. L. WALKER
SUPERVISORY PATENT EXAMINER
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